# THE NATIONAL CHILDREN'S STUDY AT A GLANCE



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Centers for Disease Control and Prevention

U.S. ENVIRONMENTAL PROTECTION AGENCY



HEALTH GROWTH ENVIRONMENT

#### **COMMUNITIES OF THE NATIONAL CHILDREN'S STUDY**



#### **National Children's Study Sponsors**

- U.S. Department of Health and Human Services
  - National Institutes of Health
  - Centers for Disease Control and Prevention
- U.S. Environmental Protection Agency

### WHAT IS THE NATIONAL CHILDREN'S STUDY?

he National Children's Study is a long-term research project that will examine the environmental influences on children's health and development. In fact, it will be the largest long-term study of children's health and development ever to be conducted in the United States. The Study will involve about 100,000 children, from before birth to age 21, to better understand the link between the environments in which children are raised and their physical and emotional health and development. For the Study, the "environment" is defined broadly to include physical surroundings; biological and chemical factors; geography; and social, educational, behavioral, family, and cultural influences. By linking a range of environmental factors to multiple health and developmental outcome measures, the Study will help to pinpoint the root causes of many of today's major childhood diseases and disorders and to determine not only which aspects of the environment are harmful, but also which are harmless or helpful to children's health and development.

Children's lives and well-being are influenced by a variety of factors or exposures, ranging from allergens, nutrition, and environmental chemicals to factors such as community livability, education, and family stability — even the physical nature of the house that shelters a child. Certain exposures are beneficial, while others can be harmful. More information is needed about all the possible effects of these exposures.

### WHAT ISSUES WILL THE STUDY FOCUS ON?

The National Children's Study is framed by a set of key scientific research questions that include some of the most pressing health and development concerns for children today. Designed as a longitudinal cohort study, it will examine participants' growth and development

over time. The Study will produce information of unprecedented value for scientists, health professionals, and families around multiple concerns, including:

- Obesity, diabetes, and physical development;
- Injuries;
- Asthma;
- Pregnancy-related outcomes; and
- Child development and mental health.

#### WHY IS THE STUDY IMPORTANT?

The National Children's Study will provide essential information about many serious health conditions and threats to optimum physical and mental development. The Study will build an invaluable data storehouse touching many areas of concern and need — and will even be prepared to answer questions that scientists and the public have yet to ask. Unlike other studies that seek answers to a single question, the Study will address multiple related questions and issues to provide as much information as possible on human health and development. Examples of research questions to be examined include these: are prenatal exposures to pesticides linked to increased risk for learning and developmental disabilities; are early childhood viral infections linked to the occurrence of asthma; and do individual, family, and community factors affect childhood injuries.

#### WHY NOW?

A confluence of events points to the need for a new study on children's health in the beginning of the 21st century. The last major long-term study of American children took place in the 1960s, and its findings are outdated by technology standards and lifestyle differences. Meanwhile, the rates of obesity, asthma, autism, and some other common childhood diseases and disorders are on the rise, with no signs of abating. Several recent studies have pointed out potential causes of conditions like obesity and asthma,

but these studies were not large enough to draw conclusions about the complex interactions of environmental, social, and genetic factors that play a role in causing disease, or about effective prevention strategies.

There is a societal and economic need for the National Children's Study data. The annual costs to the American economy associated with the five issue areas listed above currently total in the hundreds of billions of dollars and increase every year. With indicators showing that healthier children have better school attendance, learn better, and are more likely to grow up to be productive workers and family members, now is the time to pursue a long-term study of factors influencing the health and development of the nation's children.

Today's scientists and other researchers are better equipped than their predecessors to undertake the challenges posed by the Study. Technology now exists to track the vast amounts of data the Study will deliver. New tools make measurements of exposure to many environmental influences possible. There are now better means to keep participant records safe and confidential. And, with the completion of the human genome sequence

#### **COMMON EXPOSURES**

### The National Children's Study will measure factors like

- Living conditions and housing: air quality, dust, pet allergens, lead levels
- Family and social experiences: child care, alcohol use, family resources
- Community characteristics: neighborhood safety, access to health care
- Activity and diet: sports, food additives, homemade vs. takeout meals

in 2003, there is an extraordinary opportunity to analyze the interactions between genetic and environmental factors that affect health.

### WHY FOCUS THE RESEARCH ON CHILDREN?

Children are not simply "little adults." Their immature systems often make them more vulnerable than adults to environmental exposures. And young children interact with the environment differently. For instance, they spend more time on the ground, close to dust, soil, and other elements of the environment. Scientists understand too little about many environmental factors and whether they are harmful, harmless, or helpful to children's health and development. Studies conducted with adults often have little application to children because of children's weaker mechanisms for detoxification and protection. Research findings on the effects of lead on child development or findings on the impact of maternal alcohol use on the fetus highlight the need for concern about environmental exposures and children's developing systems. Issues like these form a key rationale for exploring the effects of other potentially serious environmental influences on children.

#### WHO WILL BE INVOLVED?

The National Children's Study will recruit more than 100,000 women from across the United States who are likely to have a child in the near future. These women will represent a cross-section of ethnic, geographic, and socioeconomic groups. The Study is on schedule to start recruitment nationwide in 2005–2006. By including families from varied backgrounds and family structures, the Study can better investigate issues of vital interest to all communities.

#### WHO IS LEADING THE STUDY?

The National Children's Study will involve partners from federal, state, and local governments; schools and universities; public and non-profit groups; and private

companies. Led by the U.S. Department of Health and Human Services — through the National Institutes of Health and the Centers for Disease Control and Prevention — and by the U.S. Environmental Protection Agency, the Study will rely on a consortium of more than 40 federal agencies and departments, as well as on child and environmental advocacy and support groups, private industries and foundations, community leaders, university-based scientists, and local medical sites across the country.

Researchers from each of these entities participate in advisory and consultative groups and, in some instances, help design and guide the Study. As the Study evolves, the consortium will maintain partnerships to ensure that the Study is addressing the pressing public health problems of the nation. The consortium, together with its partners, will sustain the Study over the next two decades and ensure that all organizations, agencies, and groups are focused on common goals.

## WHAT WILL WE GET FROM THE NATIONAL CHILDREN'S STUDY — AND WHEN?

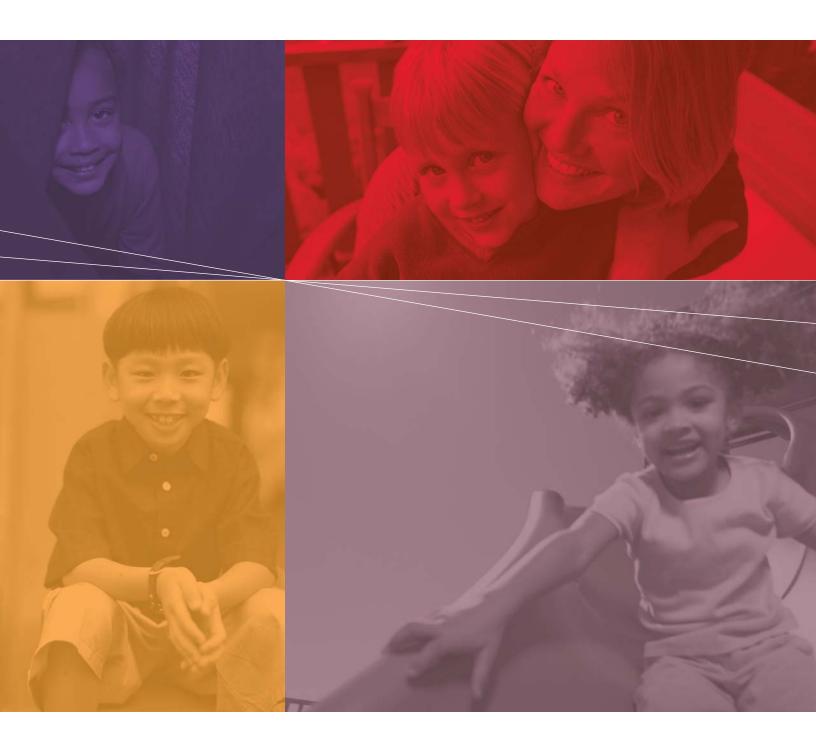
The National Children's Study will identify early-life exposures that affect individuals during childhood and throughout the rest of their lives. It will provide researchers, health care providers, educators, and others who work with children with a vast resource of data from which to develop prevention strategies, health and safety guidelines, educational approaches, and possibly new treatments and cures for health conditions. In addition, the Study will prove or disprove many theories of child health and development that are speculative today. For the first time, the Study will allow researchers to apply knowledge of the human genome on a large scale and to understand the conditions that arise from many factors, including gene/environment interactions.



It will provide answers to questions about children's health and development for many years. Researchers will not need to wait for the completion of the Study to analyze the results. Beginning with birth outcomes, findings will become available within two to three years after the Study is launched. Throughout the Study's duration, intermittent results will allow for continued insights.

### WHY SHOULD I GET INVOLVED WITH THE NATIONAL CHILDREN'S STUDY?

By supporting the National Children's Study, whether through expertise, communication, community resources, participation in the Study, or other ways, you will be helping to improve the health and well-being of children for years to come. The success of the Study rests solely on the participation and support of health care providers, scientists and other researchers, educators, community leaders and liaisons, child health and environmental advocacy and support groups, policy makers, and, of course, those who volunteer to participate in the Study and their families.



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